

Abstract

An object of the present invention is to provide a new exhaust gas purification apparatus for an internal combustion engine operated under a condition of an air fuel ratio leaner than a theoretical air fuel ratio, a method for purification of exhaust gas and an exhaust gas purification catalyst, which is suitable for suppressing degradation of the NOx purification catalyst by sulfur components.

An exhaust gas purification apparatus for an internal combustion engine, which comprises an exhaust gas passage for an internal combustion engine into which exhaust gas of lean air fuel ratio and rich or stoichiometric air fuel ratio flows, a NOx trapping catalyst that functions to trap NOx in the exhaust gas when the air fuel ratio is lean, a sulfur component trapping agent for trapping sulfur components in the exhaust gas, which is disposed before the NOx trapping catalyst, and a catalyst for oxidizing the sulfur components, which is disposed before the sulfur component trapping agent, wherein the sulfur component trapping agent has a trapping rate of 85 % or more of an amount of inflow sulfur in a trapping test at a flow rate of 150 ppm SO₃- 5% O₂ - balance being N₂ gas per 1.5 moles of the sulfur trapping agent at 300 °C and a space velocity of 30,000/h for 1 hour;

and the sulfur component trapping agent has a release rate of sulfur amount of 5 % or less of sulfur trapped in the sulfur

component trapping agent in a release test under a flow of a
3000 ppm H_2 - 600 ppm C_3H_6 - 3000 ppm O_2 - 3.5 % CO - balance
being N_2 gas at a temperature elevation rate of 10 °C/min from
250 to 750 °C at an sulfur component trapping agent entrance,
5 after the trapping test.